U.S. General Services Administration

Tech Talk
IoT @ GSA PBS

May 17, 2017

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Agenda

- PBS overview
- IoT overview
- Facilities and IoT
- Benefits & Risks
- What's Next
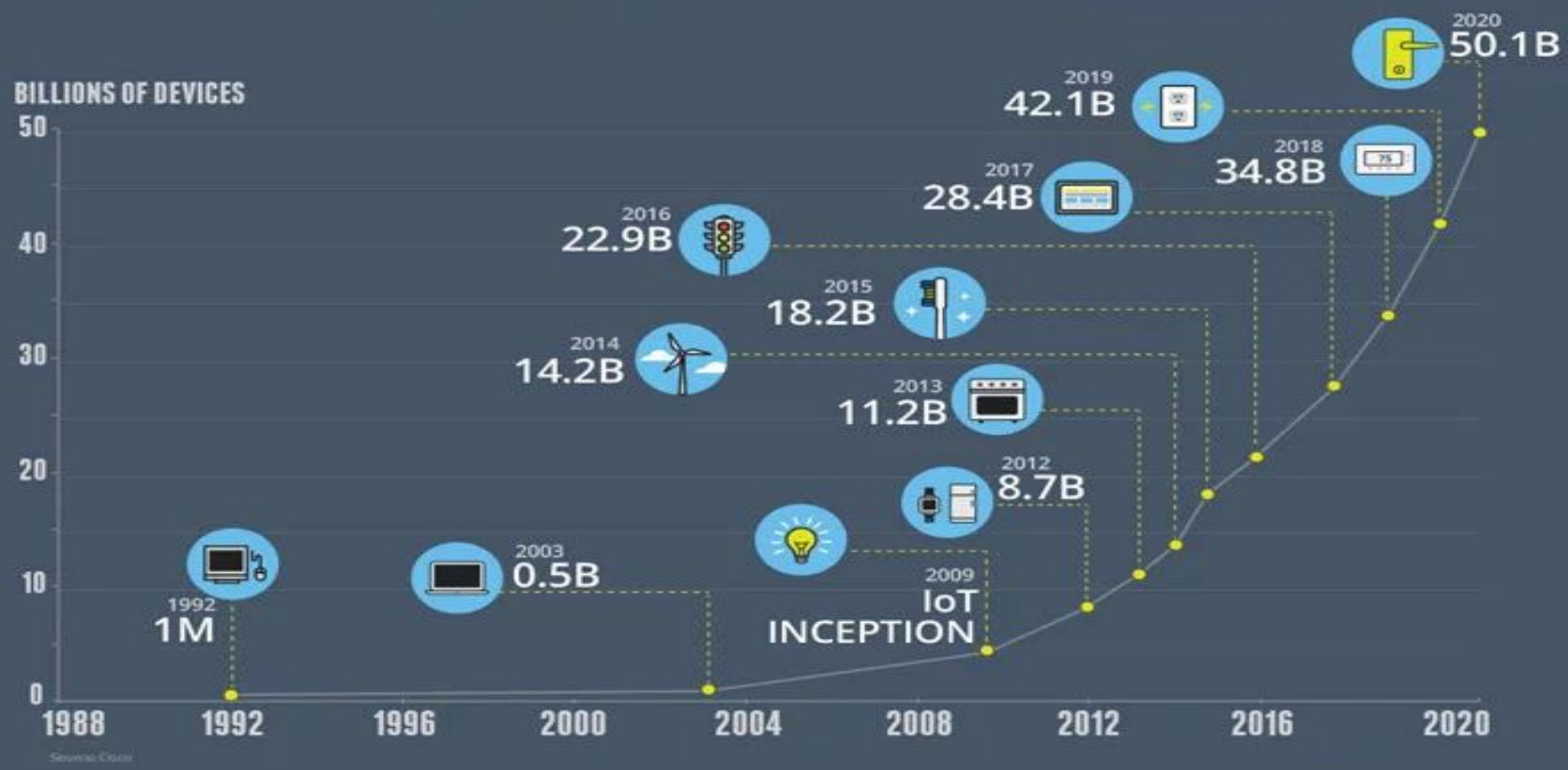- Vision

PBS Overview

Internet of Things

*"The **Internet of things** (**IoT**) is the <u>inter-networking</u> of physical devices, vehicles (also referred to as "connected devices" and "<u>smart devices</u>"), buildings, and other items <u>embedded</u> with <u>electronics</u>, <u>software</u>, <u>sensors</u>, <u>actuators</u>, and <u>network connectivity</u> which enable these objects to collect and exchange data."* (Wikipedia)
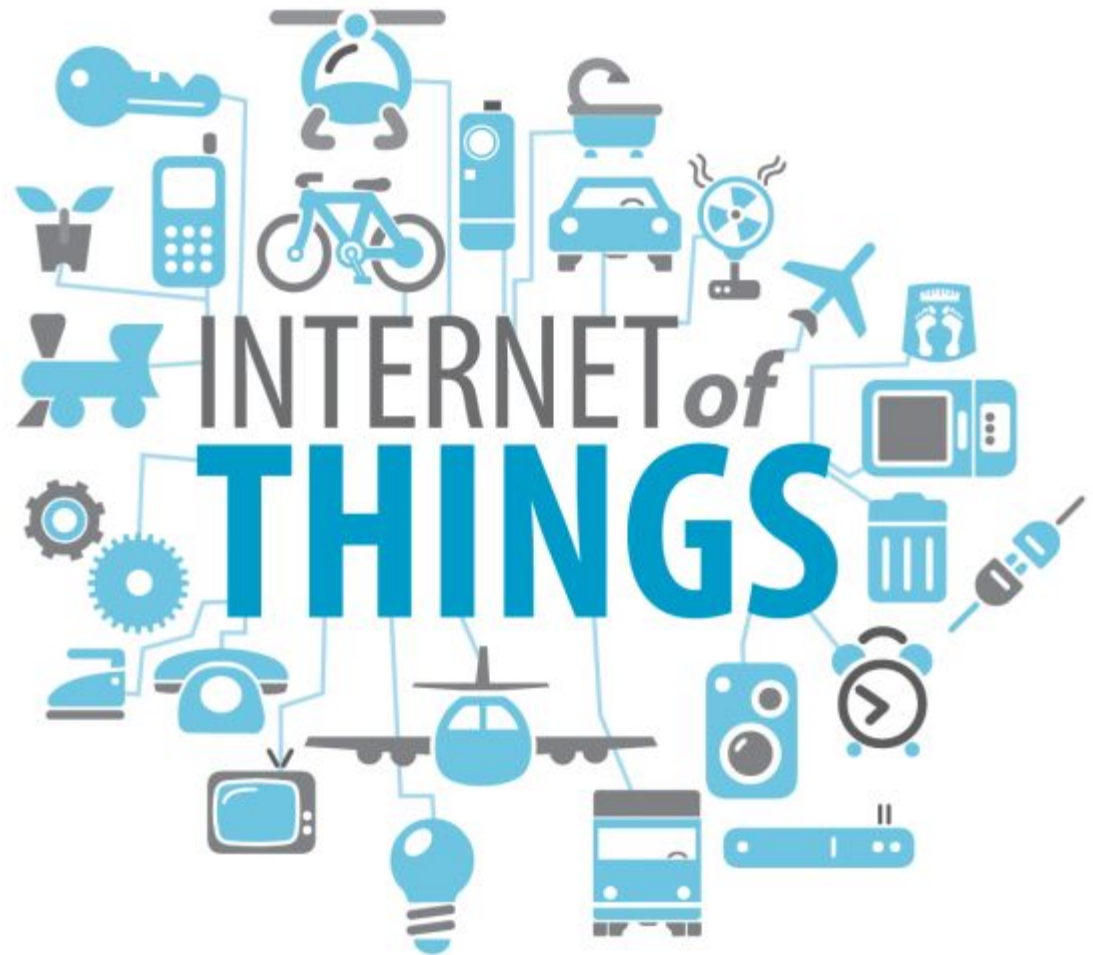
Internet of Things

GROWTH IN THE INTERNET OF THINGS
THE NUMBER OF CONNECTED DEVICES WILL EXCEED 50 BILLION BY 2020

BILLIONS OF DEVICES

2020 — 50.1B
2019 — 42.1B
2018 — 34.8B
2017 — 28.4B
2016 — 22.9B
2015 — 18.2B
2014 — 14.2B
2013 — 11.2B
2012 — 8.7B
2009 — IoT INCEPTION
2003 — 0.5B
1992 — 1M

Smart Buildings

- Facilities where information technology (IT) enables multiple pieces of building equipment to be connected and operated as a system.
- Advanced analytics and analysis
- Greater energy savings and enhanced efficiency while providing a healthy and comfortable workplace environment that facilitates productivity and optimal space utilization.
- Providing data in a transparent way that ensures a productive work environment for the highest possible tenant satisfaction.
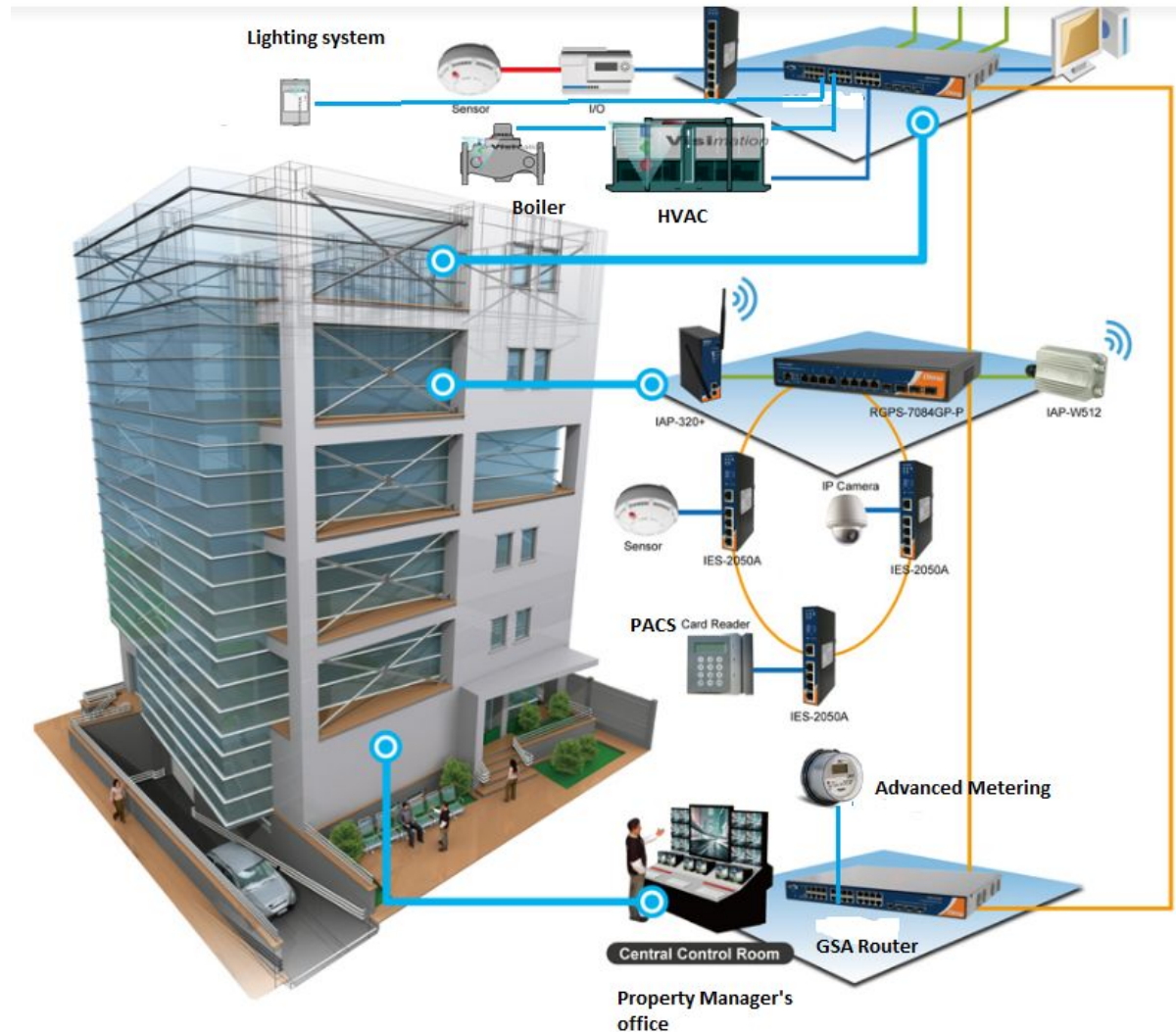
GSA BAS Dashboard

Benefits of Smart Buildings

- Uses less energy
- Reduced operating costs
- Saves money
- Smaller environmental footprint
- Positive experience

IoT Standards

- **Commercial BMS are in pre-internet era**
  - Proprietary hardware and software, vendor-only features
  - No HTTP and HTML/XML equivalent for sensors
  - Result: Fragmented islands of IoT/building data
  - Building systems need for cross system interoperability

IoT Standards
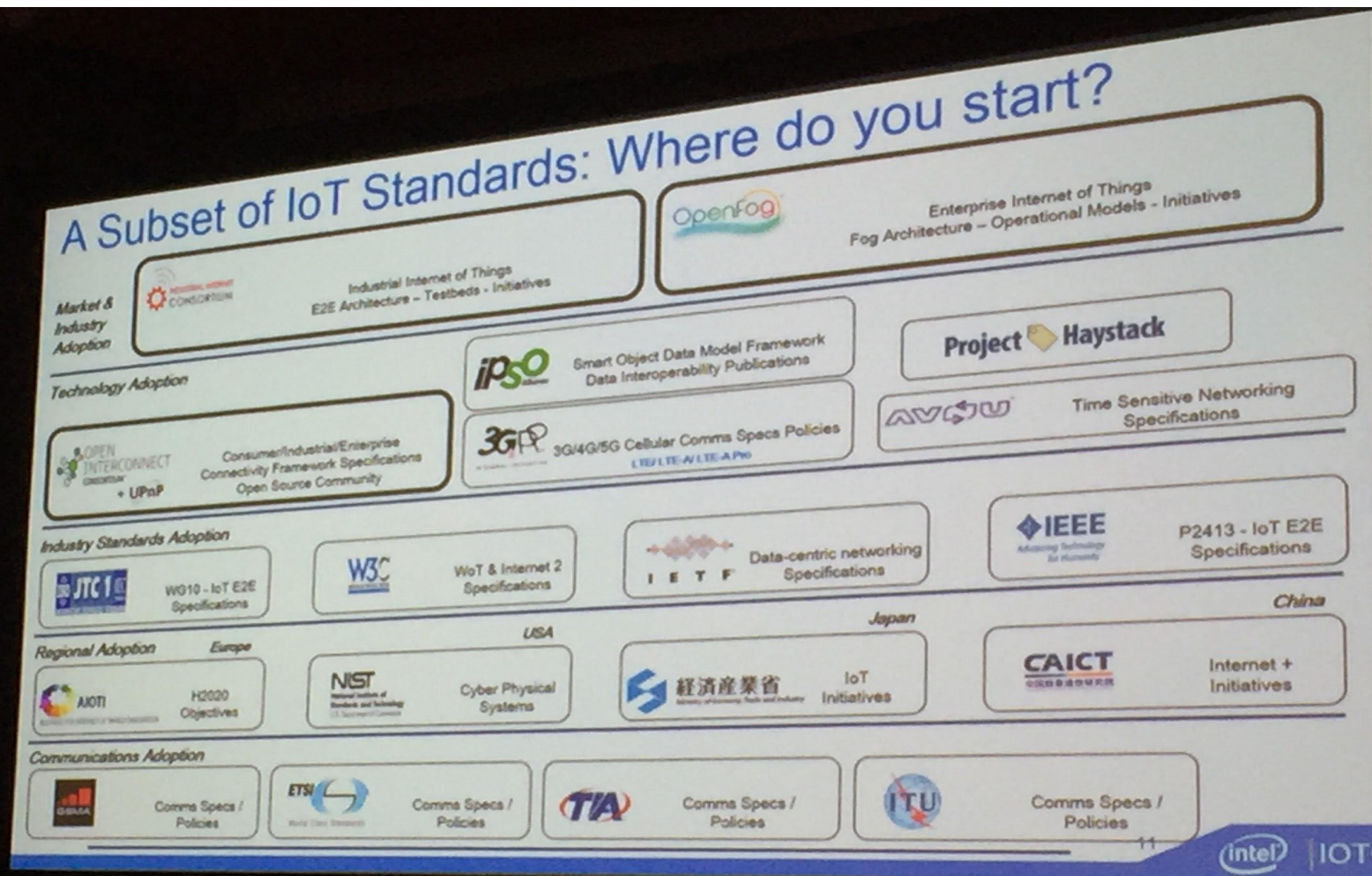
Facilities and IoT

- IoT Within Building Industry
  - "IoT promises to enable new revenue streams, provide insight into customer behavior and improve control over operations" - Gartner
- Leading providers
  - Siemens
  - Honeywell (Tridium-Niagara)
  - Johnson Controls
  - Schneider

Risks of Non-compliance

Building system is compromised:
- ○ Pranks
- ○ Ransomware,
- ○ Loss of data,
- ○ Property, financial implications
- ○ Loss of remote access to manage and control building systems

What's Next?

1. Un-intelligent Buildings
2. *Smart Buildings - Siloed*
3. Smart Buildings - Networked
4. Building Analytics - Descriptive, Predictive, Prescriptive (M2M)
5. Smart Cities
   a. ie: Chicago, NYC, Salt Lake, San Jose, Boston, Chattanooga

The Future is Here

For More Information

GSA Smart Building Strategy: -
https://www.gsa.gov/portal/category/100731

GSA Video: GSA Smart Building Video

or

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Questions